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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/817,371

04/02/2004

Matthias Loeffler

2003DE417

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11/28/2007

CLARIANT CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/817,371

Applicant(s)

LOEFFLER ET AL.

Examiner

Michael M. Bernshteyn

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on October 1, 2007. Claim 1 has been amended; no claims have been cancelled or added.
2. Claims 1-8 and 10-16 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-8 and 10-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim 1 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The amended claim 1 recites, "step C) removing the polymerization medium without isolating the polymer via a filtration step", which was not described in the specification at all. The specification only discloses that "the major part of the tert-butanol is then removed by distillation with good stirring. By applying a vacuum, the tert-butanol residues are removed from the mixture" (page 12, lines 12-14).

Claim Rejections - 35 USC § 103

4. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

5. Claims 1-8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Loffler et al. al. (U. S. Patent Application Publication 2001/0029287, now U. S. Patent 6,437,068) in view of CU Boulder Organic Chemistry Undergraduate Courses (<http://orgchem.colorado.edu/hndbksupport/solremoval/solvremoval.html>).

With regard to the limitation of instant claims 1, 15 and 16, Loffler discloses water-soluble or water-swellaible crosslinked copolymers consisting essentially of structural units of formula 1 (cyclic N-vinylcarboxamide) or a mixture of structural units of the formula 1 with structural units of the formula 2 (linear N-vinylcarboxamide) and structural units of the formula 3 (ammonium salt of an acrylamidoalkylsulfonic acid). These copolymers are crosslinked with compounds, which contain at least two olefinic double bonds. These crosslinked copolymers are suitable as thickeners, in particular for cosmetic and pharmaceutical preparations (abstract). He discloses that the invention provides crosslinked copolymers consisting essentially of: a1) 1 to 50% by weight of the repeating structural units of the formula 1, where n is an integer from 2 to 9, or a2) 1 to 50% by weight of a mixture of the repeating structural unit of formula 1 and of the repeating structural unit of the formula 2, where R, R¹ and R² may be identical or different and are hydrogen or a linear or branched alkyl or alkenyl group having in each case 1 to 30, preferably 1 to 20, in particular 1 to 12, carbon atoms and b) 49.99 to 98.99% by weight of the repeating structural unit of the formula 3, in which R³ is hydrogen, methyl or ethyl, Z is C₁ -C₈ -alkylene, n is an integer from 2 to 9, and X is an alkali metal or alkaline earth metal ion, and c) 0.01 to 8% by weight, preferably 0.01 to

5% by weight, of crosslinking structures resulting from monomers having at least two olefinic double bonds (page 1, [0009] – page 2, [0016]).

All of the above fully corresponds to the limitations of claim 1, concerning ingredients of a copolymer (1a, 1b and 1c). Formulas 2, 3 and 4 in the prior art are correspondingly substantially identical to the instantly claimed formulas 1, 2 and 3.

With regard to the limitations of claim 1 step C) removing the polymerization medium without isolating the polymer via a filtration step, Loffler discloses that the paste was dried at 60-70 C in a **vacuum drying** cabinet for 24 hours (Example 1, page 3, [0024]). Furthermore it is noted that it is well known to one skilled in the relevant art how to remove a solvent from a mixture, which is a routine operation. The second reference discloses several methods of solvent removal such as distillation, open-dish evaporation, reduced-pressure evaporation, etc.

(<http://orgchem.colorado.edu/hndbksupport/solvremoval/solvremoval.html>).

In the absence of showing the criticality of removing the polymerization medium without isolating the polymer via a filtration step, in view of substantially identical method of free radical polymerization between Loffler and instant claims, and it is used the same initiators, crosslinkers, emulsifiers, solvents (tert-butanol), temperatures, duration, etc. as instantly claimed, and comprises the identical chemical ingredients, as discussed above, and it is used for the same purposes for cosmetic, pharmaceutical and dermatological oil-in-water emulsion compositions, it is the examiner position that Loffler's process does not necessarily differ from the claimed process.

It is axiomatic that one who performs the steps of a process must necessarily produce all of its advantage. Mere recitation of a newly discovered property or function what is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art. **Leinoff v. Louis Milona & Sons, Inc.** 220 USPQ 845 (CAFC 1984).

With regard to the limitation of instant claims 18-19, in the absence of showing the critically, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the second polymerization with elevated temperature to increase the final polyfurfuryl alcohol weight percentage in order to obtain the desirable level.

Loffler discloses that **emulsions comprise** an oil substance consisting essentially of emulsifier(s) and an oil phase. Suitable oil substances are vegetable, animal, mineral and synthetic oils, for example Guerbet alcohols having 6 to 18, preferably 8 to 10, carbon atoms, esters of linear C₆-C₁₃-fatty acids with linear C₆-C₂₀-fatty alcohols, esters of branched C₆-C₁₃-carboxylic acids with linear C₆-C₂₀-fatty alcohols, esters of linear C₆-C₁₈-fatty acids with branched alcohols, in particular 2-ethylhexanol, esters of linear and/or branched fatty acids with polyhydric alcohols (such as e.g. dimerdiol or trimertriol) and/or Guerbet alcohols, triglycerides based on C₆-C₁₀-fatty acids, vegetable oils, branched primary alcohols, substituted cyclohexanes, Guerbet carbonates, dialkyl ethers and/or aliphatic or aromatic hydrocarbons (page 4, [0035]).

All of the above fully corresponds to the limitations of claim 1 (step III b), concerning adding of a higher-boiling solvent or solvent mixture and one or more emulsifiers to the mixture of polymer and polymerization medium, and to the limitations of claims 15 and 16, because most of the above species in the prior art are correspondingly exactly the same as in instant claims 15 and 16. The only difference concerns the used terminology: prior art is silent about a higher-boiling solvent and named these species as oil substances.

It is worth to mention that according to the limitations of step III b in claim 1, the adding of a higher-boiling solvent or solvent mixture and one or more emulsifiers to the mixture of polymer and polymerization medium is the next step after the formation of polymer of high molecular weight. Practically it can be done when the reflux condenser is replaced by a distillation bridge (compare specification, example A, pages 11-12, [0034] and US'287, Example 1, page 3, [0024] and Examples 1-4 O/W cream, pages 4-5, [0042-0060]).

Therefore, in view of substantially identical method of free radical polymerization between Loffler and instant claims, and it is used the same initiators, crosslinkers, emulsifiers, solvents (tert-butanol), temperatures, duration, etc. as instantly claimed, and comprises the identical chemical ingredients, as discussed above, and it is used for the same purposes for cosmetic, pharmaceutical and dermatological oil-in-water emulsion compositions, it is the examiner position that Loffler's process does not necessarily different from the claimed process.

With regard to the limitation of instant claim 2, Loffler discloses that preferred copolymers according to the invention contain 2 to 30% by weight of structural units of the formula 1, or 1 and 2, 69.5 to 97.5% by weight of structural units of formula 3, and 0.2 to 3% by weight of crosslinking structures resulting from monomers having at least two olefinic double bonds (page 2, [0017]).

With regard to the limitation of instant claim 3, Loffler discloses that crosslinking structures from monomers having at least two olefinic double bonds are preferably derived from allyl acrylate or allyl methacrylate, dipropylene glycol diallyl ether, polyglycol diallyl ether, triethylene glycol divinyl ether, etc. (page 2, [0018]). It is worth to mention, that a generic claim cannot be allowed to an applicant if the prior art discloses a species falling within the claimed genus, and the species in that case will anticipate the genus. *In re Slayter*, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960); *In re Gosteli*, 872 F.2d 1008, 10 USPQ 1614 (Fed. Cir. 1989).

With regard to the limitation of instant claim 4, Loffler discloses that the crosslinking structures are particularly preferably derived from monomer of the formula 4, which is identical to formula 3 in instant claim 4, in which R is hydrogen, methyl or ethyl (page 2, [0018]).

With regard to the limitation of instant claims 5 and 6, Loffler discloses that by varying the monomers acrylamidosulfonic acid salt and N-vinylcarboxamide, and the proportion of crosslinker, copolymers are obtained which can be used as thickeners both in oil-in-water emulsions, and in water-in-oil emulsions at a pH of from 7 to 2.5. Irrespective of whether the invention is to prepare lotions with a comparatively low

viscosity, or creams and ointments with **high viscosities**, emulsions comprise an oil substance consisting essentially of emulsifier(s) and an oil phase in the amounts by weight of from 5 to 95%, preferably 25 to 85%, and water to make up 100% by weight (pages 3-4, [0035]).

With regard to the limitation of instant claim 8, Loffler discloses that water- or solvent-containing systems, such as solutions, emulsions or suspensions, are frequently adjusted to higher viscosities or thickened for economical or performance reasons, or for stability reasons. For many products, **increasing the viscosity** also improves their ability to be spread uniformly, in particular on uneven surfaces. This is true in particular for skincare compositions and pharmaceutical ointments on the skin (page 1, [0003]).

With regard to the limitation of instant claims 7 and 10, Loffler discloses that as result of the polymerization in alcohol or alcohol mixture with **a water content of less than 10% by weight** and here in particular in tert-butanol, products are obtained, with regard to their residual content of solvent remaining in the product, are toxicologically safe and can be thus used, for example, in **cosmetic products** (page 1, [0009]).

With regard to the limitation of instant claims 11 and 12, Loffler discloses that the mixture was then cooled to room temperature and the solid was filtered off with suction. The paste was dried at 60-70C in a vacuum drying cabinet for 24 hours, giving 92.2 g of a fine white powder (composition (page 3, [0024], Example 1).

With regard to the limitation of instant claim 13, Loffler discloses that **N-vinylpyrrolidone** can be used for preparation of the composition (page 3, [0024], Example 1).

With regard to the limitation of instant claim 14, Loffler discloses that by incorporating more ammonium salts of acrylamidosulfonic acids, it is possible to improve the thickening action of the polymers (page 3, [0023], lines 1-3 and [0024], Example 1). Additionally, the ammonium salt of 2-acrylamido-2-methylpropanesulfonic acid is preferably used for the polymerization (page 1, [0008]).

Response to Arguments

6. Applicants traverse the rejection of claims 1-8 and 10-16 under 35 U.S.C. 102(b) as being anticipated by Loffler et al. al. (U. S. Patent Application Publication 2001/0029287, now U. S. Patent 6,437,068). Applicant's arguments have been fully considered but they are not persuasive.

7. It appears that the focal Applicants argument again resides in the contention that there is no disclosure of the addition of the higher boiling solvent or solvent mixture to eliminate the isolation of the polymer by a filtration step (page 7, the 1st paragraph).

8. It is worth to mention that Loffler fully discloses the limitations of claim 1 ((III, steps A), B), and C)) concerning adding of a higher-boiling solvent or solvent mixture and one or more emulsifiers to the mixture of polymer and polymerization medium (see the comments above), and the limitations of claims 15 and 16, because most of the species in the prior art are correspondingly exactly the same as in instant claims 15 and 16 (compare instant claims 15 and 16, which describe in details all possible species for the higher-boiling solvent or solvent mixture, and US'287, pages 3-4, [0035]). The only

difference concerns the used terminology: the prior art is silent about a **higher-boiling solvent** and named these species as **oil substances**.

With regard to the limitations of III step B in claim 1, Loffler discloses that the adding of a higher-boiling solvent or solvent mixture and one or more emulsifiers to the mixture of polymer and polymerization medium is the next step after the formation of polymer of high molecular weight. Practically it can be done when the reflux condenser is replaced by a distillation bridge (compare the specification, example A, pages 11-12, [0034] and US'287, Example 1, page 3, [0024] and Examples 1-4 O/W cream, pages 4-5, [0042]-[0060]).

9. In the light of the discussion above, the rejection of record has not been withdrawn. The rejection remains in force.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MB
11/19/2007

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